UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/606,050	06/29/2000	Shigeo Honma	H-926	7679

24956 7590 12/30/2003	EXAMINER	
MATTINGLY, STANGER & MALUR, P.C.	WINTERS, MAREISHA N	
1800 DIAGONAL ROAD		
SUITE 370	ART UNIT	PAPER NUMBER
ALEXANDRIA, VA 22314	2153	11

DATE MAILED: 12/30/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

PTO-90C (Rev. 10/03)

	Application No.	Applicant(s)
Office Action Summary	09/606,050	HONMA ET AL.
	Examiner	Art Unit	
	Mareisha N. Winters	2153	

-- *The MAILING DATE of this communication appears on the cover sheet with the correspondence address* --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) FROM
THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed
  after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any
  earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *16 October 2003*.

2a)☒ This action is **FINAL**.   2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is
closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *13-16* is/are pending in the application.

     4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *13-16* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

     Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

     Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. §§ 119 and 120

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

     a)☐ All b)☐ Some * c)☐ None of:

         1.☐ Certified copies of the priority documents have been received.

         2.☐ Certified copies of the priority documents have been received in Application No. _____.

         3.☐ Copies of the certified copies of the priority documents have been received in this National Stage
application from the International Bureau (PCT Rule 17.2(a)).

     * See the attached detailed Office action for a list of the certified copies not received.

13)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application)
since a specific reference was included in the first sentence of the specification or in an Application Data Sheet.
37 CFR 1.78.

     a) ☐ The translation of the foreign language provisional application has been received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific
reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Attachment(s)

1)☒ Notice of References Cited (PTO-892)   4)☐ Interview Summary (PTO-413) Paper No(s). _____ .

2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)   5)☐ Notice of Informal Patent Application (PTO-152)

3)☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ .   6)☐ Other: .

DETAILED ACTION

Response to Amendment

1.   This Office Action is in response to the communication filed on August 11, 2003 and the

supplemental communication filed on October 16, 2003. Claims 1-4 have been canceled, claims

5-12 have been withdrawn from consideration and claims 13-16 have been newly added.

2.   Claims 13-16 are pending in the application.

Claim Rejections - 35 USC § 103

3.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in
> section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are
> such that the subject matter as a whole would have been obvious at the time the invention was made to a person
> having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the
> manner in which the invention was made.

4.   Claims 13-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent

No. 6,148,414 to Brown et al. (hereinafter "Brown") in view of U.S. Patent No. 6,640,278 to

Nolan et al. (hereinafter "Nolan").

In considering claim 13, Brown discloses a computer system (Fig. 1) comprising:

a plurality of client computers (Fig. 1, "10_1" – "10_N");

a plurality of servers (Fig. 1, "20_1" – "20_N");

a plurality of storages which have multiple disk drives and keep data in said plurality of

disk drives (Fig. 1, "45");

a local area network (LAN) which connects said computers with said servers (column 6,

lines 14-18); and

a storage area network (SAN) forms a switched circuit network having fiber channel switches and arranged to connect any of said servers and any of said storages through said fiber channel switches (column 6, lines 45-46), and said computer system comprising:

a terminal, which is connected to said LAN and equipped with operation and management software which performs storage management (Fig. 1, "30_1" – "30_N" and column 6, lines 20-23).

Brown shows the substantial features of the claimed invention, including a terminal with operation and management software, which performs storage management (the controllers which include one or more AMFs [array management functions, which are defined as the body that provides common control and management for one or more disk or tape arrays]). However, Brown fails to explicitly disclose which type of management is performed by the array management functions including *management of logical volumes in said storages, management of data arrangement including moving data in one of said logical volumes to another of said logical volumes, management of error monitoring for said storages, management of setting up said fiber channel switches, and management of a backup operation for data in said storages.* Nonetheless these features are well known in the art of storage management and would have been an obvious modification to the system disclosed by Brown, as evidenced by Nolan.

In an analogous art, Nolan discloses a method for management of storage resources in a storage network, including a system comprising a plurality of client servers and a plurality of storage devices connected via a SAN, with a storage management system with operation and management software performing storage management including management of logical volumes in said storages, management of data arrangement including moving data in one of said

logical volumes to another of said logical volumes, management of error monitoring for said

storages, management of setting up said fiber channel switches, and management of a backup

operation for data in said storages (column 2, lines 39-41 and lines 49-52). Given this teaching

of Nolan, a person of ordinary skill in the art would have readily recognized the advantages and

desirability of modifying the system of Brown by incorporating these well-known features in

order to provide scalability, high performance and reliability.

In considering claim 14, Brown in view of Nolan fails to disclose *wherein said SAN is*

connected to SAN in another computer system via a wide area network (WAN). Nonetheless, this

feature is well-known in the art and would have been an obvious modification to the system

disclosed by Brown in view of Nolan in order to provide a system that centrally manages

storages from multiple locations.

In considering claim 15, Brown discloses a method of replicating incoming host data in a

data storage network (column 4, lines 3-5), however it fails to explicitly disclose *wherein when a*

backup copy of data in the primary volume in a storage is made to a backup device in a non-

disruptive manner, the secondary volume corresponding to the primary volume is created by

internal functions in the relevant storage, copies are made from said primary volume to said

secondary volume, the made copies are transferred to said backup device via said SAN without

passing said LAN, and thereby backup is achieved. Nonetheless, this feature is well known in

the art and would have been an obvious modification of the system disclosed by Brown, as

evidenced by Nolan.

In an analogous art Nolan discloses a method for management of storage resources in a

storage network, including a system comprising a plurality of client servers and a plurality of

storage devices connected via a SAN, with a storage management system. Nolan further

discloses wherein when a backup copy of data in the primary volume in a storage is made to a

backup device in a non-disruptive manner, the secondary volume corresponding to the primary

volume is created by internal functions in the relevant storage, copies are made from said

primary volume to said secondary volume, the made copies are transferred to said backup device

via said SAN without passing said LAN, and thereby backup is achieved (column 27, lines 33-67

– column 28, lines 1-23). Given this teaching of Nolan, a person of ordinary skill in the art

would have readily recognized the advantages and desirability of modifying the system of Brown

by incorporating these well-known features in order to provide an interoperable backup system.

In considering claim 16, Brown discloses a computer system (Fig. 1) comprising:

a plurality of client computers (Fig. 1, "10_1" – "10_N");

a plurality of servers (Fig. 1, "20_1" – "20_N");

a plurality of storages which keep data (Fig. 1, "45");

a local area network (LAN) which connects said computers with said servers (column 6,

lines 14-18); and

a storage area network (SAN) which lies between said servers and said storages (Fig. 1,

"50");

wherein said SAN forms a switched circuit network having fiber channel switches and

arranged to connect any of said servers and any of said storages through said fiber channel

switches (column 6, lines 45-46).

Although Brown discloses a method of replicating incoming host data in a data storage

network (column 4, lines 3-5), it fails to explicitly disclose *wherein when a backup copy of data*

in a primary volume in one of said storages is to be made to a backup device in a non-disruptive

manner, said one of said storages is arranged to receive a volume split instruction from one of

said servers, process as if data in the primary volume were kept in a secondary volume of said

one of said storages as it is at the time of receiving said instruction, and made the backup copy

from said secondary to the backup device. Nonetheless, this feature is well known in the art and

would have been an obvious modification of the system disclosed by Brown, as evidenced by

Nolan.

In an analogous art Nolan discloses a method for management of storage resources in a

storage network, including a system comprising a plurality of client servers and a plurality of

storage devices connected via a SAN, with a storage management system. Nolan further

discloses wherein when a backup copy of data in a primary volume in one of said storages is to

be made to a backup device in a non-disruptive manner, said one of said storages is arranged to

receive a volume split instruction from one of said servers, process as if data in the primary

volume were kept in a secondary volume of said one of said storages as it is at the time of

receiving said instruction, and made the backup copy from said secondary to the backup device

(column 27, lines 33-67 – column 28, lines 1-23). Given this teaching of Nolan, a person of

ordinary skill in the art would have readily recognized the advantages and desirability of

modifying the system of Brown by incorporating these well-known features in order to provide

an interoperable backup system.

Response to Arguments

5.   Applicant's arguments with respect to claims 1-4 have been considered but are moot in

view of the new ground(s) of rejection.

Conclusion

6.   Applicant's amendment necessitated the new ground(s) of rejection presented in this

Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a).

Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE

MONTHS from the mailing date of this action. In the event a first reply is filed within TWO

MONTHS of the mailing date of this final action and the advisory action is not mailed until after

the end of the THREE-MONTH shortened statutory period, then the shortened statutory period

will expire on the date the advisory action is mailed, and any extension fee pursuant to 37

CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event,

however, will the statutory period for reply expire later than SIX MONTHS from the date of this

final action.

Any inquiry concerning this communication or earlier communications from the

examiner should be directed to Mareisha N. Winters whose telephone number is (703) 305-7838.

The examiner can normally be reached on Monday-Friday, 8:00am-5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, Glenton B. Burgess can be reached on (703) 305-4792. The fax phone number for

the organization where this application or proceeding is assigned is (703) 746-7239.

Any inquiry of a general nature or relating to the status of this application or proceeding

should be directed to the receptionist whose telephone number is (703) 305-3900.

mnw *mnw*
December 17, 2003
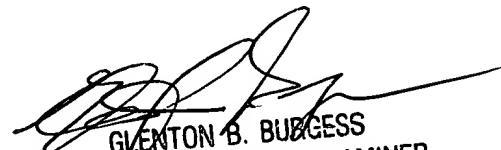
GLENTON B. BURGESS
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2100